

**Table E1** – Number of patients by province and site

Variable	Wave			
	1st (n=520)	2nd (n=575)	3rd (n=265)	Omicron (n=441)
Province, n (%)				
BC	136 (26.2)	361 (62.8)	200 (75.5)	226 (51.2)
ON	24 (4.6)	203 (35.3)	65 (24.5)	184 (41.7)
QC	360 (69.2)	11 (1.9)	0 (0.0)	31 (7.0)
Site, n (%)				
St. Paul's Hospital, Vancouver, BC	66 (12.7)	92 (16.0)	55 (20.8)	131 (29.7)
Vancouver General Hospital, Vancouver, BC	55 (10.6)	157 (27.3)	109 (41.1)	0 (0.0)
Surrey Memorial Hospital, Surrey, BC	15 (2.9)	112 (19.5)	36 (13.6)	95 (21.5)
Humber River Hospital, North York, ON	0 (0.0)	45 (7.8)	6 (2.3)	0 (0.0)
Kingston General Hospital, Kingston, ON	4 (0.8)	13 (2.3)	1 (0.4)	0 (0.0)
Mount Sinai Hospital, Toronto, ON	20 (3.8)	82 (14.3)	42 (15.8)	31 (7.0)
Sunnybrook Hospital, Toronto, ON	0 (0.0)	63 (11.0)	16 (6.0)	153 (34.7)
McGill University Health Centre, Montreal, QC	258 (49.6)	0 (0.0)	0 (0.0)	0 (0.0)
Centre hospitalier universitaire de Sherbrooke, QC	102 (19.6)	11 (1.9)	0 (0.0)	31 (7.0)

## Table S1

We enrolled 2767 COVID-19 patients in ARBs CORONA I. The following patients were excluded from the current analysis.

- Acute COVID-19 readmissions (n=83)
- Emergency Room admissions without hospitalization (n=149)
- Patients admitted to hospital but not due to acute COVID-19 (n=362; see file below)
- Patients with unknown discharge outcome or currently still hospitalized (n=19)
- Patients from sites which only enrolled ICU patients (Alberta; n=353)

Alberta site was different from the other participating sites in that it only enrolled patients who were admitted to ICU. Because the percentage of data from Alberta in ARBs CORONA I varied across waves (13%, 28%, 16% and 0% in waves 1, 2, 3 and Omicron respectively), the inclusion of Alberta site would thus confound and skew the crude results (for example, with the inclusion of Alberta data, ICU admission rate became 47%, 55%, 44% and 28% in waves 1, 2, 3 and Omicron respectively).

Pre-existing use of angiotensin receptor blockers and angiotensin-converting enzyme inhibitors prior to admission in patients included in the current study were 284/1794 (15.8%) and 332/1794 (18.5%) respectively.

Primary reason for admission	Frequency
24 hr history of diffuse full body pain and elevated serum glucose (BS 33) and hyperkalemia	1
4 days of decreased appetite, generalized weakness and immobility.	1
CHF VS INFECTION	1
ADMITTED FOR LABOUR , HAD A C-SECTION , DEVELOPED SYMPTOMS LATER	1

ADNK colon	1
AKI	2
AMS, aggressive behaviour, UTI	1
Abdominal pain	2
Abdominal pain and ascites	1
Abdominal pain, AKI, Lactic Acidosis	1
Absence seizures and Orthostatic hypotension	1
Acute Lithium Intoxication	1
Acute Subdural Hematoma from fall	1
Acute abdominal pain, perforated viscus	1
Acute alcohol hepatitis	1
Acute cholecystitis	1
Acute diverticulitis	1
Acute kidney injury due to volume depletion	1
Acute kidney injury secondary to bladder outlet obstruction from cancer	1
Acute on chronic leg swelling and difficulty mobilizing	1
Admitted for adverse reaction of chemotherapy (rash)	1
elective laparoscopic right hemicolectomy for an ascending colon cancer	1
Advance Dementia, Delirium, Anorexia	1
Afib flutter and worsening SOB	1
Aggressive behaviour	1
Alcohol Withdrawal	2
Alcohol withdrawal, Mallory-Weiss Tear.	1
Altered LOC	1
Altered mental status	2
Antidepressant overdose	1
Aplastic anemia (new diagnosis)	1
Appendicitis	2
Arm Paralysis	1
Ascites	1
Aspiration pneumonia	1
Asthma exacerbation	1
Ataxia	1
Atrial fibrillation	1
BILIARY COLIC	1
BRBPR	1
Back Pain	2
Back pain, urinary retention	1
Back soft tissue mass and abscess	1

Appendix 1, as supplied by the authors. Appendix to: Lee T, Cheng MP, Vinh DC, et al. Outcomes and characteristics of patients hospitalized for COVID-19 in British Columbia, Ontario and Quebec during the Omicron wave. *CMAJ Open* 2023. doi: 10.9778/cmajo.20220194. Copyright © 2023 The Author(s) or their employer(s). To receive this resource in an accessible format, please contact us at [cmajgroup@cmaj.ca](mailto:cmajgroup@cmaj.ca).

Bacériémir strep group b	1
Bifrontal and left temporal contusions with IVH	1
Bilateral leg cellulitis	2
Bilateral leg swelling, dyspnea	1
Biphasic stridor, increased WOB, positive steeple sign	1
Blocked right nephrotomy tube and scrotum leakage of urine NYD.	1
Brain mets	1
Brain tumour resection	1
Burns 10-12% TBSA requiring excision and grafting.	1
C6-C7 fracture dislocation with ASIA B spinal cord injury	1
CAD	1
CARDIAC - NSTEMI	1
CHEST PAIN	1
COPD exacerbation	3
COPD exacerbation and altered LOC	1
Rectal mass	1
CVA for EVT	1
Canceled elective right total knee arthroplasty, admitted due to blood pressure	1
Cancer of ascending colon	1
Cardiac arrest	3
Cellulitis	3
Cerebrovascular Accident (Stroke), Decreased Level of Consciousness	1
Chemotherapy administration.	1
Closed trimalleolar ankle fracture-right	1
Clostridium difficile colitis	2
Cognitive and functional decline	1
Cognitive impairment	1
Colitis, with significant incontinence of stool.	1
Congestive heart failure and acute non ST elevation myocardial infarction	1
Constipation	1
Cystic Fibrosis Exacerbation/Influenza positive	1
DKA	1
DKA, Fever NYD +Trop	1
Decompensated heart failure	1
Decreased lost of consciousness, long-term care placement for safety	1

Decreased renal function and graft pyelonephritis (post renal transplant 28Nov2020)	1
Deep sternal wound infection	1
Delirium	6
Depressive episode with suicidal thoughts	1
Diabetic foot ulcer	1
Diabetic ketoacidosis	3
Dialysis line infection	1
Diarrhea from shigella and campylobacter	1
Diarrhea, feeling faint	1
Disseminated TB	1
Disseminated aspergillosis	1
Dysphagia and aspiration pneumonia	1
Dyspnea	1
Dyspnea and chest pain secondary to pulmonary embolism	1
E.COLI BACTERAEMIA	2
ENTEROCOCCAL SEPSIS	1
ESRD	1
Elective resection of recurrent liposarcoma	1
Empyema	1
End-stage liver disease secondary to alcohol induced cirrhosis and probable hepatocellular carcinoma	1
Endocarditis	1
Epidural hematoma	1
Erythroderma psoraticum; Erythrodermic psoriasis; Flexural psoriasis	1
Esophageal cancer	1
Exacerbation of ILD	1
FA rapide	1
FOR UNSTABLE ANGINA/ANGIOGRAPHY TO BE DONE	1
Failure to cope, Korsakoff's encephalopathy and cirrhosis	1
Fall	16
Family called ambulance because of a noted right- sided facial droop and inability to walk today	1
Fast AF, CHF	1
Fast AFib	1
Febrile Neutropenia	1
Febrile neutropenia and sepsis	1

Fever, Hypotension	1
Foot gangrene	1
Functional decline	2
GI Bleed	1
Generalized weakness and Fatigue	1
Generalized weakness and abdominal distension.	1
Geriatric - Falls	1
HYPONATREMIA, ACUTE ON CHRONIC KIDNEY INJURY	1
Heart failure	1
Heat Exhaustion, Rhabdomyolysis	1
Hip fracture	1
Hip pain	1
Hydropneumothorax	1
Hypercalcemia	1
Hypercalcemia, AKI, and metastatic cancer in spine	1
Hypoglycemia	1
Hyponatremia	1
Hypotensive	1
Hypoxia, intubated when transferred	1
Hypoxia/Lung Mass	1
ICA Stroke	1
IgA Kappa Multiple Myeloma with diffuse lytic lesions	1
Ileus	1
Incisional hernia	1
Inferior STEMI	1
Intermediate high-risk PE provoked by recent major surgery (CABG)	1
Intracerebral haemorrhage	1
Intracranial hemorrhage	1
Intractable hiccups	1
Involved in an MVC and sustained fractures to the L5 & S1, Rt superior pubic ramus, Fibula & tibia, and injury to the Rt kidney and adrenal gland	1
Ischemic colitis	1
Left ICA /MCA	1
Left eye trauma	1
Left foot infection	1
Left foot osteomyelitis	1

Left intertroch fracture	1
Left lower lobe pneumonia	1
Leg cellulitis	3
Liver Failure	1
Liver cirrhosis	1
Low CSF pressure headache	1
Lower extremity pain (neoplastic context)	1
Lower left left infection	1
Lung cancer resection	1
MCA stroke	1
METASTATIC lung cancer	1
MS exacerbation	1
Major neurocognitive disorder	1
Mechanical fall	1
Melena	1
Melena and abdominal pain	1
Met/Endo DKA	1
Met/end Hypokalemia	1
Methicillin-sensitive Staphylococcus aureus bacteremia with sepsis	1
Multiple sclerosis, rhabdomyolysis	1
Multisystem Trauma	1
Myasthenia Gravis	1
Myelodysplastic syndrome	1
Myelopathy secondary to dural fistula	1
NSTEMI	1
Nausea and alcohol withdrawal	1
Nausea, vomiting, diarrhea	1
Neck mass, lymphadenopathy	1
Neph peritonitis	1
Neurological disorders	1
New bullous lesion on hand	1
Newly diagnosed HIV	1
Non hodgkins lymphoma	1
Non neutropenic fever with hypotension	1
Not specified (but not COVID-19)	27
Opioid and benzo withdrawal	1
PALPITATIONS	1
Pain from pulmonary ADNK	1
Pancreatitis	1
Partial sigmoid volvulus	1
Patient is a self referral for dark tarry stools (being managed as a case of H.pylori)	1

Pericardial Effusion	1
Pericarditis	1
Perte autonomie	1
Perte d'autonomie	1
Pleural Effusion	1
Pneumonia	4
Pneumonia and hypernatremia	1
Pneumonia/pneumonitis	1
Polysubstance OD	1
Polytrauma	2
Poor food intake, leg swelling, abdominal distension, increasing jaundice and generalized weakness for 1 week	1
Port-a-cath bacterial infection	1
Possible stroke	1
Post Cardiac Arrest	1
Post op meningioma resection	1
Pregnancy	3
Presented with a new R) wrist fracture in the context of a week history of increased falls.	1
Presyncope	1
Progressive pulmonary mets	1
Prosthetic knee infection	1
Psychiatric	1
Psychosis	1
Pt fell from 6 story building onto concrete	1
Pyelonephritis	1
R/O TB given contact history	1
Radiation-induced oral mucositis	1
Rapid atrial fibrillation	1
Rectal cancer	1
Recurrent SOB and malignant plueral effusion	1
Recurrent falls	1
Renal transplant with postoperative course complicated with delirium	1
Resp COPD exacerbation	1
Retroperitoneal leiomyosarcoma	1
Right Hip Fracture	1
Right MCA/ACA/ICA stroke	1
Right sinonasal inverting papilloma	1
Right thumb flexor tenosynovitis	1
Rule out stroke vs complex migraine	1
SBO	1



SIGMOID VOLVULUS, SMALL BOWEL OBSTRUCTION	1
STADE IV PANCREAS NEOPLASIA	1
STEMI	4
SUSPECTED PELVIC INFLAMMATORY DISEASE	1
Schizophrenia	1
Seizure	2
Seizure versus delirium. Recovered from COVID-19 infection on 26-Mar-2021	1
Seizures	1
Sepsis	5
Severe abdominal pain and constipation	1
Severe hyponatremia	1
Shortness of breadth and loss of consciousness suggestive of a seizure.	1
Shunt infection	1
Small right temporal intracerebral hemmorrhage post fall	1
Social admission	1
Spinal cord compression	1
Spontaneous hemarthrosis	1
Stomach ache with emesis (Covid +ve)	1
Stroke	3
Subacute on chronic functional decline	1
Subarachnoid haemorrhage from vertebral artery (stroke)	1
Subarachnoid hemorrhage and Covid pneumonia	1
T5 compression fracture following a fall from standing height. This is on background of progressive gait instability.	1
TTP	1
Tenosynovitis Flexors (Hand)	1
Thigh abscess	1
Tibial plateau fracture	1
Tracheal Bleed	1
Trauma	4
Traumatic fall with subdural hematoma	1
Traumatic subdural hematomas	1
Treatment for T-Cell lymphoma	1
Triple vessel coronary artery disease	1
UGIB	1
URO - RENAL COLIC	1

UTI	1
Upper gastrointestinal bleed	3
Urosepsis	2
Vaso occlusive crisis	1
Vertebral Fracture	1
Viral illness ,delirium	1
Chest pain post stent operation	1
Weakness	1
Weakness and falls	1
Wet grangrene 2/2 diabetes	1
Work of weakness, gurgling sounds with breathing when lying down, history of fall 2 days ago , feverish	1
Workup of neuropathy- diagnosis of NMDA encephalopathy	1

**Table E2** – Co-morbidities of Omicron wave patients admitted with acute COVID-19 by vaccination status

Variable	Vaccination status		P
	Unvaccinated (n=130)	≥2 doses (n=242)	
Co-morbidities, n (%)			
Any of the four below	82/130 (63.1)	205/242 (84.7)	<0.001
Chronic cardiac disease	39/130 (30.0)	112/241 (46.5)	0.002
Chronic kidney disease	14/130 (10.8)	71/240 (29.6)	<0.001
Hypertension	63/130 (48.5)	159/242 (65.7)	0.001
Diabetes	39/130 (30.0)	90/242 (37.2)	0.165
Chronic pulmonary disease	23/130 (17.7)	54/241 (22.4)	0.285
Liver disease	2/130 (1.5)	14/239 (5.9)	0.052
Chronic neurological disorder	19/130 (14.6)	45/238 (18.9)	0.299
Malignant neoplasm	11/130 (8.5)	48/240 (20.0)	0.004
Chronic hematologic disease	7/130 (5.4)	51/241 (21.2)	<0.001
AIDS / HIV	2/127 (1.6)	1/238 (0.4)	0.278
Rheumatologic disorder	15/130 (11.5)	32/240 (13.3)	0.621
Dementia	3/130 (2.3)	24/241 (10.0)	0.007
Malnutrition	1/129 (0.8)	2/241 (0.8)	1.000
Obesity	10/130 (7.7)	16/229 (7.0)	0.804

P value was based on Chi-square test or Fisher's exact test as appropriate.

**Table E3** – COVID-19 therapies during the hospital course of Omicron wave patients admitted with acute COVID-19 by vaccination status

Variable	Vaccination status		P
	Unvaccinated (n=130)	≥2 doses (n=242)	
Co-intervention while hospitalized, n (%)			
Antiviral agent	34/129 (26.4)	81/241 (33.6)	0.151
Remdesivir	27/129 (20.9)	58/241 (24.1)	0.494
Antibiotic	92/130 (70.8)	163/242 (67.4)	0.499
Corticosteroid	109/130 (83.8)	182/242 (75.2)	0.054
Dexamethasone	99/130 (76.2)	159/242 (65.7)	0.037
Antifungal agent	10/129 (7.8)	14/241 (5.8)	0.470

P value was based on Chi-square test or Fisher's exact test as appropriate.

**Table E4**– Baseline characteristics of Omicron COVID-19 wave versus prior wave patients admitted to hospital for acute COVID-19.

Variable	Wave				p <sup>1</sup>	p <sup>2</sup>	p <sup>3</sup>
	1st (n=520)	2nd (n=575)	3rd (n=265)	Omicron (n=441)			
ARBs/ACEi prior to admission					0.376	0.102	0.178
Unknown	7	0	1	0			
None	1178 (65.7)	344 (66.2)	364 (63.4)	186 (70.2)			
ARBs	284 (15.8)	82 (15.8)	105 (18.3)	38 (14.3)			
ACEi	332 (18.5)	94 (18.1)	105 (18.3)	41 (15.5)			
Sex, n (%)					0.371	0.578	0.706
Unknown	1	0	0	1			
Male	293 (56.5)	351 (61.0)	161 (60.8)	261 (59.3)			
Female	226 (43.5)	224 (39.0)	104 (39.2)	179 (40.7)			
Age, mean (SD)	70.2 (16.3)	65.8 (17.3)	63.0 (17.1)	70.1 (15.2)	0.893	<0.001	<0.001
Received any COVID-19 vaccine prior to admission, n (%)	0/520 (0.0)	3/574 (0.5)	21/256 (8.2)	261/391 (66.8)	<0.001	<0.001	<0.001
Received at least 2 doses of COVID-19 vaccine prior to admission, n (%)	0/520 (0.0)	0/574 (0.0)	0/256 (0.0)	242/390 (62.1)	<0.001	<0.001	<0.001
Admitted to ICU on hospital admission day, n (%)	104 (20.0)	83 (14.4)	35 (13.3)	64 (14.5)	0.027	0.960	0.648
Organ support on admission day							
Invasive mechanical ventilation, n (%)	55/520 (10.6)	34/575 (5.9)	16/265 (6.0)	20/441 (4.5)	<0.001	0.332	0.380
RRT or dialysis, n (%)	8/511 (1.6)	7/570 (1.2)	4/262 (1.5)	8/439 (1.8)	0.759	0.439	0.770
Vasopressors, n (%)	35/520 (6.7)	33/575 (5.7)	14/265 (5.3)	18/440 (4.1)	0.074	0.234	0.461
Temperature (°C) - mean (SD)	37.5 (0.9)	37.4 (0.9)	37.4 (0.9)	37.1 (0.9)	<0.001	<0.001	<0.001
Missing, n	19	9	3	16			
Heart rate (beats per minute) - mean (SD)	91.4 (20.6)	95.5 (20.3)	96.7 (19.2)	92.6 (21.5)	0.382	0.031	0.010
Missing, n	6	4	3	2			
Respiratory rate (breaths per minute) - mean (SD)	22.9 (6.4)	24.9 (7.9)	24.1 (7.5)	23.2 (7.7)	0.413	0.001	0.144
Missing, n	15	6	4	12			
sBP - mean (SD)	128.8 (22.9)	130.5 (23.5)	126.9 (20.6)	131.2 (26.9)	0.132	0.648	0.027
Missing, n	2	5	2	7			
dBp - mean (SD)	73.7 (11.9)	74.3 (13.2)	72.4 (12.3)	73.9 (31.3)	0.060	0.013	0.760
Missing, n	3	14	9	9			
Oxygen saturation (SaO <sub>2</sub> ; %) - mean (SD)	93.5 (4.2)	90.8 (8.5)	91.1 (7.8)	93.1 (6.7)	0.359	<0.001	<0.001
Missing, n	13	3	2	5			
Required oxygen therapy, n (%)	186/516 (36.0)	174/544 (32.0)	87/253 (34.4)	147/426 (34.5)	0.623	0.407	0.975
WBC count ( ×10 <sup>3</sup> /μL) - Median (IQR)	6.5 (4.9, 8.6)	6.9 (5.1, 9.2)	6.3 (4.7, 8.8)	7.3 (5.1, 9.9)	0.006	0.265	0.014
Missing, n	17	6	4	3			
Haemoglobin (g/L) - Median (IQR)	130.0 (118.0, 145.0)	132.0 (117.0, 145.0)	134.0 (119.0, 146.0)	127.0 (111.0, 141.0)	0.002	<0.001	<0.001

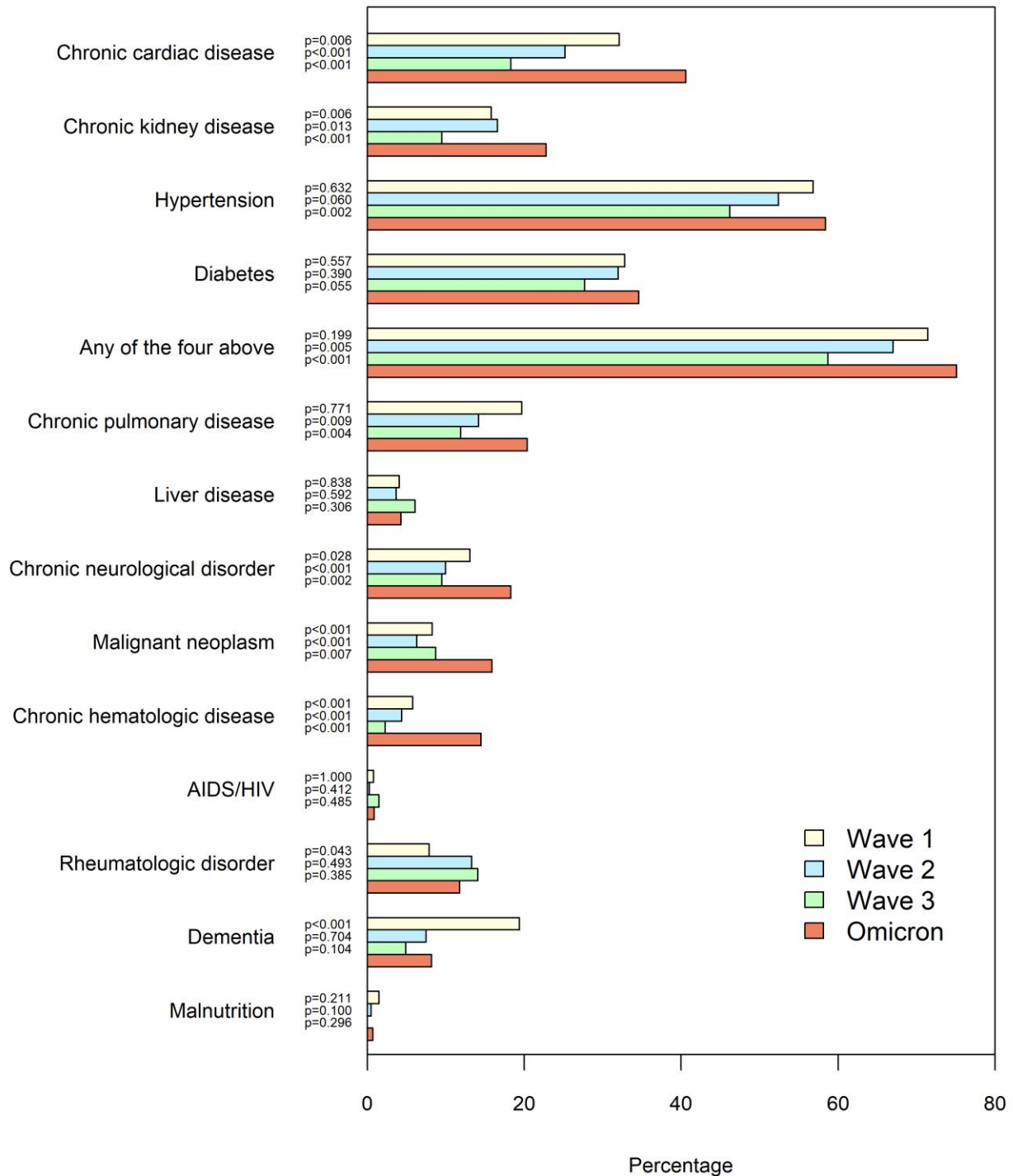
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Variable	Wave				P <sup>1</sup>	P <sup>2</sup>	P <sup>3</sup>
	1st (n=520)	2nd (n=575)	3rd (n=265)	Omicron (n=441)			
Missing, n	15	7	4	3			
Creatinine (μmol/L) - Median (IQR)	84.0 (68.0, 114.0)	87.0 (70.0, 120.5)	82.0 (66.0, 106.0)	95.0 (70.0, 136.0)	0.001	0.057	<0.001
Missing, n	10	11	7	4			
ALT (U/L) - Median (IQR)	29.0 (17.0, 50.5)	35.0 (22.0, 57.0)	38.5 (23.0, 63.0)	23.0 (16.0, 38.0)	0.003	<0.001	<0.001
Missing, n (%)	156	91	39	122			
AST (U/L) - Median (IQR)	45.0 (26.0, 77.0)	46.0 (32.0, 77.0)	47.0 (38.0, 74.0)	38.5 (23.0, 59.0)	0.082	0.002	<0.001
Missing, n (%)	430	271	106	343			
D-Dimer (ng/mL)- Median (IQR)	970.0 (580.0, 1860.0)	912.5 (597.0, 1905.0)	876.0 (636.5, 1423.5)	1117.0 (578.0, 1892.0)	0.622	0.801	0.355
Missing, n (%)	343	325	105	346			

P value was based on Chi-square test or Fisher's exact test as appropriate.

1. Comparison between wave 1 and Omicron
2. Comparison between wave 2 and Omicron
3. Comparison between wave 3 and Omicron

**Figure E1.** Comorbidities of patients in Omicron wave versus prior wave patients admitted to hospital for acute COVID-19.



P value was based on Chi-square test or Fisher’s exact test as appropriate and was for the comparison between Omicron wave and waves 1,2 and 3.

Variable	Wave				p <sup>1</sup>	p <sup>2</sup>	p <sup>3</sup>
	1st (n=520)	2nd (n=575)	3rd (n=265)	Omicron (n=441)			
Co-morbidities, n (%)							
Any of the four below	370/518 (71.4)	383/572 (67.0)	155/264 (58.7)	331/441 (75.1)	0.207	0.005	<0.001
Chronic cardiac disease	166/517 (32.1)	143/568 (25.2)	48/262 (18.3)	179/440 (40.7)	0.006	<0.001	<0.001
Chronic kidney disease	82/519 (15.8)	95/573 (16.6)	25/263 (9.5)	100/438 (22.8)	0.006	0.013	<0.001
Hypertension	295/519 (56.8)	300/572 (52.4)	121/262 (46.2)	257/441 (58.3)	0.654	0.064	0.002
Diabetes	170/518 (32.8)	183/571 (32.0)	73/264 (27.7)	152/441 (34.5)	0.590	0.418	0.060
Chronic pulmonary disease	102/519 (19.7)	81/570 (14.2)	31/261 (11.9)	90/440 (20.5)	0.757	0.009	0.004
Liver disease	21/517 (4.1)	21/573 (3.7)	16/264 (6.1)	19/438 (4.3)	0.832	0.586	0.310
Chronic neurological disorder	68/519 (13.1)	57/572 (10.0)	25/262 (9.5)	80/437 (18.3)	0.027	<0.001	0.002
Malignant neoplasm	43/517 (8.3)	36/567 (6.3)	23/263 (8.7)	70/439 (15.9)	<0.001	<0.001	0.006
Chronic hematologic disease	30/518 (5.8)	25/572 (4.4)	6/263 (2.3)	64/440 (14.5)	<0.001	<0.001	<0.001
AIDS / HIV	4/491 (0.8)	2/573 (0.3)	4/264 (1.5)	4/433 (0.9)	1.000	0.411	0.486
Rheumatologic disorder	41/517 (7.9)	76/573 (13.3)	37/263 (14.1)	52/439 (11.8)	0.042	0.501	0.391
Dementia	100/516 (19.4)	43/572 (7.5)	13/263 (4.9)	36/440 (8.2)	<0.001	0.696	0.103
Malnutrition	8/517 (1.5)	3/573 (0.5)	0/264 (0.0)	3/439 (0.7)	0.212	1.000	0.295
Obesity	53/482 (11.0)	53/571 (9.3)	25/244 (10.2)	31/426 (7.3)	0.054	0.260	0.182



**Table E5.** COVID-19 therapies during the hospital course of Omicron COVID-19 wave versus prior wave patients admitted to hospital for acute COVID-19.

Variable	Wave				P <sup>1</sup>	P <sup>2</sup>	P <sup>3</sup>
	1st (n=520)	2nd (n=575)	3rd (n=265)	Omicron (n=441)			
Co-intervention while hospitalized, n (%)							
Antiviral agent	72/516 (14.0)	107/572 (18.7)	42/265 (15.8)	134/439 (30.5)	<0.001	<0.001	<0.001
Remdesivir	8/516 (1.6)	96/572 (16.8)	27/265 (10.2)	99/439 (22.6)	<0.001	0.021	<0.001
Antibiotic	434/520 (83.5)	488/575 (84.9)	210/265 (79.2)	306/441 (69.4)	<0.001	<0.001	0.004
Corticosteroid	160/520 (30.8)	501/575 (87.1)	241/265 (90.9)	340/441 (77.1)	<0.001	<0.001	<0.001
Dexamethasone	56/520 (10.8)	484/575 (84.2)	235/265 (88.7)	296/441 (67.1)	<0.001	<0.001	<0.001
Antifungal agent	34/520 (6.5)	24/575 (4.2)	22/265 (8.3)	29/439 (6.6)	0.966	0.085	0.400

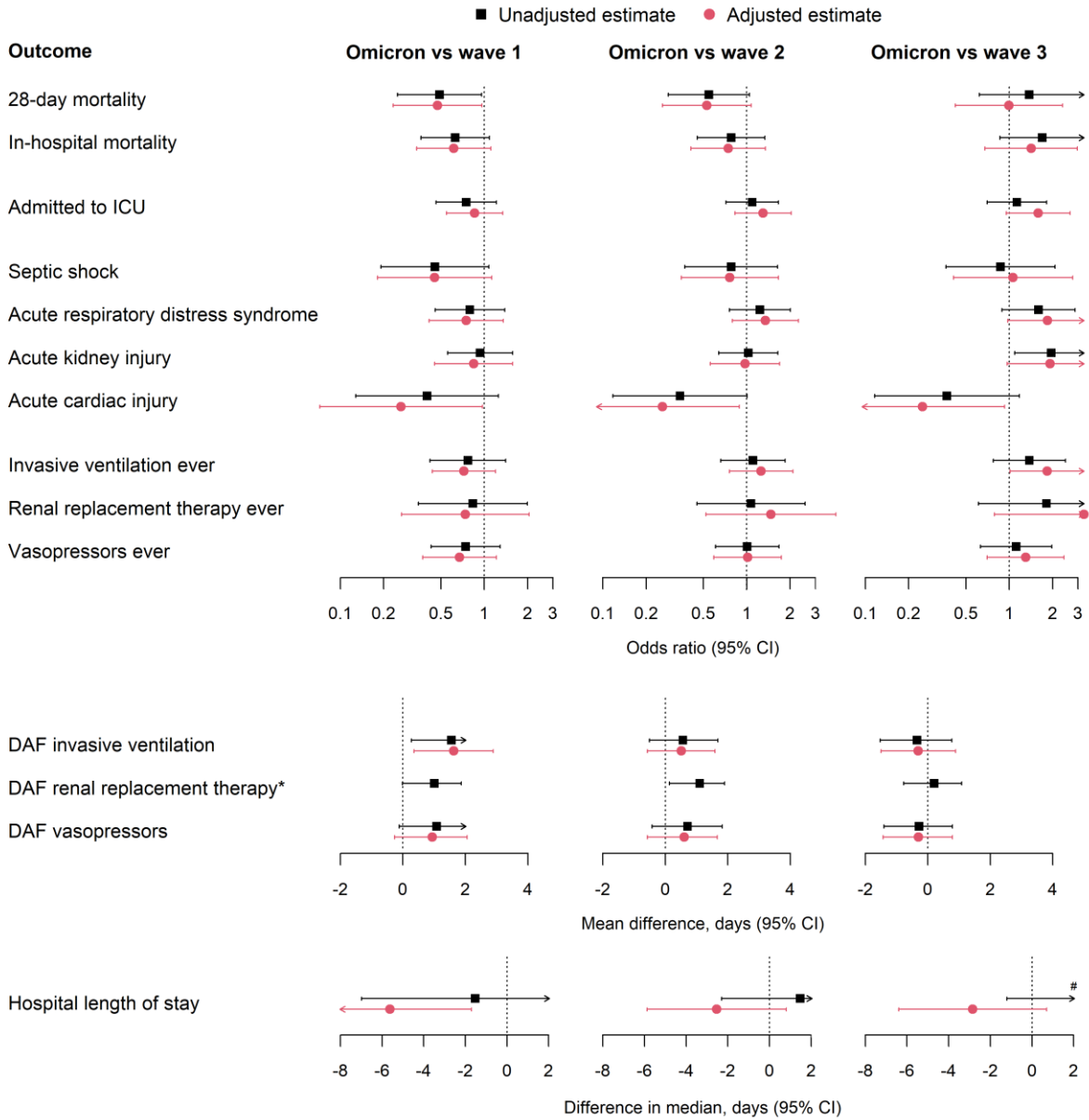
P value was based on Chi-square test or Fisher's exact test as appropriate.

1. Comparison between wave 1 and Omicron
2. Comparison between wave 2 and Omicron
3. Comparison between wave 3 and Omicron

**Table E6– Outcomes of Omicron COVID-19 wave versus prior wave patients admitted to hospital for acute COVID-19.**

Variable	Wave			
	1st (n=520)	2nd (n=575)	3rd (n=265)	Omicron (n=441)
28-day mortality, n (%)	95/520 (18.3)	93/575 (16.2)	19/264 (7.2)	42/433 (9.7)
In-hospital death, n (%)	111/520 (21.3)	103/575 (17.9)	25/265 (9.4)	63/441 (14.3)
Admitted to ICU, n (%)	201/520 (38.7)	217/575 (37.7)	89/264 (33.7)	121/441 (27.4)
Septic shock, n (%)	50/510 (9.8)	44/547 (8.0)	15/255 (5.9)	39/430 (9.1)
Acute respiratory distress syndrome, n (%)	107/490 (21.8)	100/540 (18.5)	34/256 (13.3)	66/437 (15.1)
Acute kidney injury, n (%)	131/513 (25.5)	132/538 (24.5)	34/246 (13.8)	119/429 (27.7)
Acute cardiac injury, n (%)	40/495 (8.1)	47/547 (8.6)	17/252 (6.7)	18/418 (4.3)
Organ support while hospitalized, n (%)				
Invasive mechanical ventilation	130/520 (25.0)	118/575 (20.5)	42/265 (15.8)	61/441 (13.8)
RRT or dialysis	33/511 (6.5)	30/570 (5.3)	7/262 (2.7)	30/439 (6.8)
Vasopressors	120/520 (23.1)	125/575 (21.7)	49/265 (18.5)	70/440 (15.9)
Organ support during first 14 days, n (%)				
Invasive mechanical ventilation	127/520 (24.4)	116/575 (20.2)	40/265 (15.1)	53/439 (12.1)
RRT or dialysis	26/508 (5.1)	24/568 (4.2)	6/262 (2.3)	23/436 (5.3)
Vasopressors	116/520 (22.3)	122/574 (21.3)	47/264 (17.8)	62/437 (14.2)
DAF invasive mechanical ventilation - first 14 days				
Mean (SD)	10.0 (5.9)	11.0 (5.3)	12.1 (4.4)	12.5 (4.0)
Unknown, n	2	2	3	18
DAF RRT- first 14 days				
Mean (SD)	11.8 (5.0)	12.3 (4.5)	13.1 (3.3)	13.1 (3.2)
Unknown, n	11	5	2	23
DAF Vasopressors - first 14 days				
Mean (SD)	10.7 (5.5)	11.3 (5.0)	12.4 (3.9)	12.6 (3.8)
Unknown, n	2	2	2	20
Hospital length of stay- decedents				
n	111	103	24	48
Median (IQR)	11.0 (6.0, 21.0)	11.0 (7.0, 20.0)	12.0 (9.5, 24.0)	16.5 (9.5, 35.5)
Range	(0.0, 63.0)	(1.0, 44.0)	(2.0, 62.0)	(2.0, 246.0)
Hospital length of stay- survivors				
n	409	471	240	378
Median (IQR)	15.0 (7.0, 26.0)	9.0 (5.0, 17.0)	9.0 (5.0, 17.0)	8.0 (4.0, 16.0)
Range	(2.0, 151.0)	(2.0, 313.0)	(2.0, 114.0)	(1.0, 143.0)
ICU length of stay - decedents				
n	51	57	12	37
Median (IQR)	15.0 (5.0, 26.0)	12.0 (7.0, 21.0)	21.5 (10.0, 45.5)	15.0 (10.0, 29.0)
Range	(0.0, 61.0)	(0.0, 38.0)	(3.0, 57.0)	(0.0, 246.0)
ICU length of stay - survivors				
n	149	159	73	77
Median (IQR)	10.0 (4.0, 17.0)	7.0 (4.0, 12.0)	9.0 (3.0, 16.0)	6.0 (3.0, 12.0)
Range	(0.0, 92.0)	(0.0, 113.0)	(1.0, 75.0)	(0.0, 85.0)

**Figure E2.** Comparison of outcomes between COVID-19 Omicron and prior waves by regression analysis – among unvaccinated patients.



The following factors were accounted for in the adjusted analysis: age, sex, co-morbidities (chronic heart disease, hypertension, chronic kidney disease, diabetes, chronic pulmonary disease, chronic neurological disorder, cancer and chronic hematologic disease), baseline systolic blood pressure, heart rate, SaO<sub>2</sub> and serum creatinine.

\*Adjusted regression analysis was not feasible numerically as too few patients received renal replacement therapy during the first 14 days

# Estimated difference from unadjusted regression analysis was 2.46 days.